



FIFTY YEARS OF MUSICAL EXCELLENCE



THE HAMMOND MODEL A (1934)

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The Hammond® Organ story began in a loft over an Evanston grocery store, for it was there, even before an electric organ was contemplated, that the organization was born that was to become the founder and leading member of an industry. Today the Hammond name is known and respected around the world. During the past 50 years, Hammond Organs have been sold throughout the world to the tune of well over a billion dollars. The stories they could tell would fill volumes.

As we review the past 50 years and the great strides which have been made by the company since the first Hammond Organ was invented in 1934, President Donald R. Sauvey and his entire staff look forward to even greater achievements for the organization which launched the organ industry. With an outstanding line of organs for prospective customers of nearly every economic level and degree of musical ability, with a highly selective dealer organization, with strong top management teams in the areas of research, engineering, manufacturing and marketing, and with the financial capability necessary to support the continuing growth of the organization, Hammond Organ Company looks confidently to the expanding future of the organ industry and to its continued leadership in that industry.

Over the years, the company has broadened its base through acquisitions to strengthen its position as an independent company and as a leader in the music industry. The most outstanding acquisitions to the industry were the additions of the Gibbs Manufacturing and Research Corporation and the Electro Music Company. These companies have been combined with the Hammond family under the Accutronics name to be the industry leader in the manufacture and distribution of reverb units and Leslie® Speakers.

Laurens Hammond, the inventor of the Hammond Organ and the founder of the company which bears his name, was born on January 11, 1895, in Evanston, Illinois. That same year a gentleman in



LAURENS HAMMOND
1895 — 1973

Hamburg, Germany, invented an electric clock powered by a synchronous motor that kept time by operating in phase with the alternating current from a power plant. That two such disparate events in two such distant places could ever converge in one story is but another confirmation of the old cliché that truth is stranger than fiction.

Laurens Hammond was later to invent a synchronous electric clock whose motor would become an essential part of his electric organ. And he was to discover, together with all his clock competitors, that his patent had been superseded from the day he was born by an unknown tinkerer that year in Hamburg.

Young Hammond's mother did much to encourage Laurens and his three sisters in their creativity. She took her children to Europe in 1898, following the death of her husband, to pursue a career as a professional painter. While living in Paris, upon her encouragement 14 year old Laurens patented his plan for an automatic automobile transmission and presented it to the Renault Motor Car Company. Although his idea was rejected (1909 was too early for such an idea), his dream of becoming an inventor was not dampened.

Laurens Hammond always maintained that he could not carry a tune or play an instrument, but he was exposed to music early in life while in Dresden and again later when serving as an acolyte at St. Luke's Episcopal Church in Evanston after returning home in 1909.

Engineering, science and invention were his dreams and he was only sixteen years old when he obtained a patent on an

improved barometer that would sell for only a dollar, yet was so sensitive in measuring air pressure above sea level that it could register the difference in altitude from the floor to the top of his desk. While his invention found no ready market, it brought him \$300 and taught the lesson that an invention alone is not enough—it needs a buyers' market.

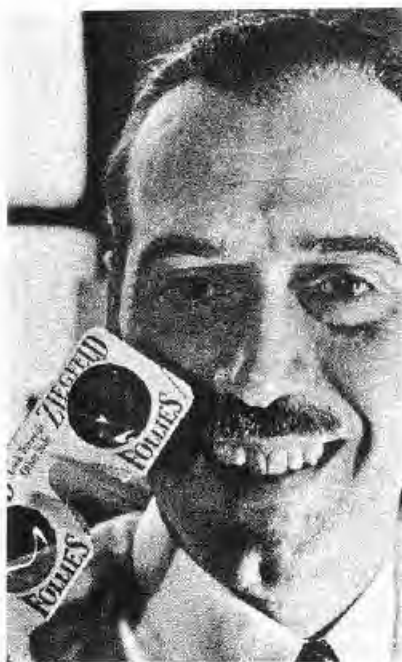
Hammond went on to college, enrolling in mechanical engineering at Cornell University. His interests were so broad and his talent so evident that he took an advanced electrical engineering examination by mistake, and passed it.

The summer of 1914 rained on most of the world the bloodiest war that history had known. The course of events for nations and for men changed beyond speculation of what might have been. But for the intervention of World War I, Laurens Hammond might have continued in his job at the McCord Radiator Company in Detroit where he had gone after graduation from Cornell.

Instead, he went to France with the army, returning after the armistice for a two-year period of employment as chief engineer at the Gray Motor Company in Detroit, Michigan, a manufacturer of marine engines.

The interruptions of war, however, did nothing to lessen his interest in tinkering, designing and inventing. Annoyed by the loud ticking of spring driven clocks, in 1920 he invented a "tickless" clock in which the noisy motor was enclosed in a soundproof box. Marketed by the Ansonia Clock Company, it provided him with enough money to set himself up in business as an inventor....and to turn his mind to the ways of clocks and the speculation of how electricity could perform this mundane but precision job.

The Hammond Organ perhaps had its remote beginning three years after the war when Hammond rented a loft in New York City and set up his own laboratory. There he developed his famous synchronous motor that revolved in phase with the 60 cycle electric power plant alternating current then becoming standard.



Laurens Hammond and the 3-D glasses which were a part of one of his well-known inventions.

The following year, 1922, the tiny and efficient motor became an essential element of the first three dimensional movies. Hammond filmed scenes through two cameras fixed at the distance separating human eyes. When thrown on the screen, the overlapping pictures were viewed as a single, 3-D picture through a motor-powered device with a revolving shutter that alternately exposed the scene to one eye and then the other.

The system was sold to the Selwyn Theater in New York City through the Televue Corporation. Reception by audiences and critics was enthusiastic, but the venture collapsed in thirty days for lack of continued support by the movie industry and the public. He then made the system more economical by simplifying the viewing device to a pair of cardboard spectacles with one eyepiece red and the other green. It was this 3-D version that was revived for a short while in the 1930's, in the 1950's and once again in the 1980's. In 1922 it was used for spectacular stage effects in the Ziegfeld Follies and in 1983 it was once again used to present the realism of "Jaws III".

Income from the Ziegfeld Follies invention permitted Hammond and his new bride to take a leisurely tour of Europe. By 1925, the revenue ceased and the prospect of becoming a father created

the necessity of finding work. After several unsuccessful inventions, Hammond and E. F. Andrews of the Andrews Radio Company founded the Andrews-Hammond Laboratory.

Thinking about radio, they sought some way to operate those early day battery-powered receivers with household alternating current. The solution was the "A-Box" that changed alternating to direct current. The invention was soon in production in their little laboratory over an Evanston, Illinois grocery store.

In 1926, the research-oriented team of Hammond and Andrews hired a salesman--Emory Penny. Also recruited in this period was a businessman whose organizational and administrative abilities were to prove of inestimable value to Hammond enterprises--Forrest H. Redmond.

Redmond as vice president and Penny as sales manager of the A-Box Company soon demonstrated the business ability that was to make the Hammond Organ the industry leader. Penny's phenomenal sales ability helped run up profits of \$175,000 until, once again, the seemingly inevitable happened....the radio industry brought out receivers that could be plugged directly into wall outlets.

In 1928, George H. Stephens became Hammond's chief engineer, establishing the reputation for outstanding quality in all of its products over the years. He was directly responsible for final manufacturing design of all Hammond products--ranging from clocks and

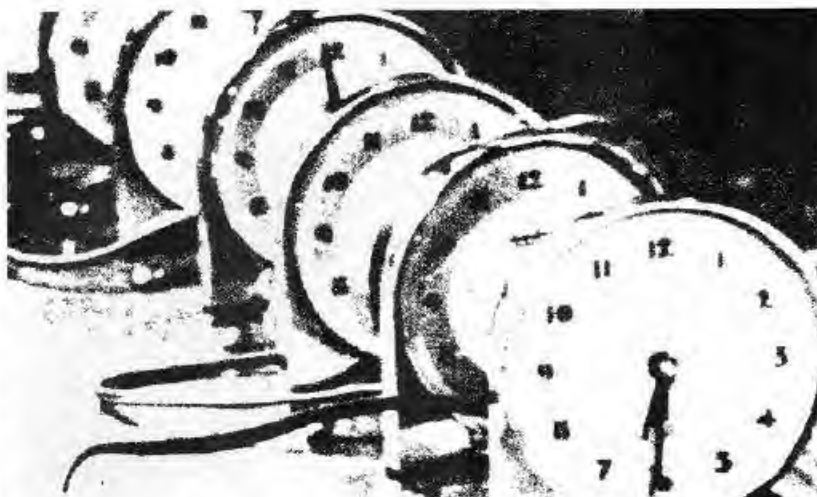
electric bridge tables to electric organs and World War II aircraft control devices.

A result of this assembled talent along with many hours of laboratory time saw the perfection of an electric clock using ideas from Hammond's sound-proofed "tickless" clock and his synchronous electric motor. In 1928, the Hammond Clock Company was incorporated under the laws of Illinois with Redmond as general manager and Penny as sales manager. The factory was still a loft over an Evanston grocery store.

Hammond's fortunes at last began to soar even though the competition was stiff. The Hammond Clock Company showed a profit of \$507,720 (remember that in that day, Federal Income Taxes only amounted to \$69,627)!

The only difficulty with the Hammond Clock was caused by the disinterest of the power companies in keeping their current at a steady 60 cycles. The ingenious solution was to have Hammond salesmen give an electric clock to every electric utility engineer in charge of the current's frequency. Thus, to be sure his own clock would operate perfectly in his home, the engineer would keep constant check of his generating equipment at the power plant.

The company was prospering in 1930 as the clouds of the Great Depression drew ever closer. The factory had been moved from Evanston to a plant on Ravenswood Avenue in Chicago and then to a five-story brick building at 2915 North Western Avenue.



A new series of Hammond Clocks rolled down the assembly line at Western Ave.

Competition was spelled by many names.....so glutted was the market with electric clocks (and so penniless was America's population) that the bottom fell out. One hundred and fifty clock companies went out of business in 1932 and dumped their remaining inventory for whatever price they could get.

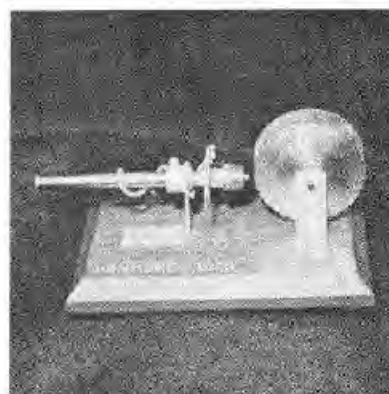
The Hammond Clock Company shook to its financial foundations. Wrigley Chewing Gum helped a little by using a half million 89 cent plastic Hammond Clocks as premiums, but still the effect on the Hammond treasury was insignificant.

The company was possibly saved from the pit of bankruptcy by the head clock salesman, William Hetznecker. He obtained a \$75,000 advance on a sizeable order from the Postal Telegraph Company for the large, 12- to 15-inch dial clocks that are still often seen keeping accurate time in many businesses

across the nation.

By the summer of 1931, banks were failing, millions of workers were unemployed and the nation was literally in a state of despair. That spring, Stanley M. Sorensen was graduated from Chicago's Schurz High School. He was interested in pursuing a career in accounting, but felt fortunate in landing a job as the mail boy at Hammond Clock Company for eight dollars a week. In 1955, Sorensen was to become president of Hammond Organ Company.

Laurens Hammond perfected a device that shuffled a pack of playing cards into four piles and began building this mechanism into a bridge table. The bridge table was patented in November of 1932 and 14,000 were made and sold by Christmas for the high depression era price of \$25. The line was discontinued, primarily because the national income had fallen to 60 percent of its 1929 level.



Model of a Hammond Tonewheel

Laurens Hammond was an avid and acute reader with a remarkable memory. Undoubtedly by 1933 Hammond had a reading acquaintance with the developments in electrical and electronic production of music sound. The exact point at which a new idea is conceived is usually difficult if not impossible to pinpoint. The fact that Laurens Hammond turned his non-musical mind to the invention of electric music, however, is generally traced to his search for products that could use his synchronous motor.

The constant sound of the phonograph from the fourth floor test room plus the weird electrical sounds squeaking from Hammond's third floor lab at the Western Avenue plant literally made the building tremble at times. None but a trained musician could filter out a single note from the vast array of musical tones.

One musician did. He was William L. Lahey, assistant treasurer, and also organist at St. Christopher's Episcopal Church in the Chicago suburb of Oak Park. At the end of one particularly ear-shattering day, Hammond approached Lahey. "Bill," he asked, "did you hear any unusual sound distinctly today?" Lahey said that he had noted something.....a flute sound. "Well," replied Hammond, "I've made an electric flute."

That one note of the flute, the wind organ's first solo stop of more than 400 years earlier, became the genesis of the electric organ.



The Hammond Bridge Table

The heart of the musical apparatus heard from the third floor laboratory was a tone wheel generator. About the size of a silver dollar, the wheel was made with a patterned edge of protruding humps or rounded, cog-like projections which revolved in front of an electromagnet.

And it worked! By winding a wire around the magnet he was able to pick up this induced fluctuating current and feed it into a radio amplifier. There the tiny current was built up to a level where it would work a loudspeaker and disturb the air in a room so that human ears could pick up the sound waves.

He had generated electricity just as many before him had done, but he had discovered how to evoke exactly those electrical wave patterns that could be converted to musical notes. And the basic apparatus was as simple as a cog wheel on a shaft turned by a synchronous motor. Yet a single pure note of the musical scale, or even all the notes, could not produce the multi-wave sounds that are the essence of music.

A group of engineers was assembled to help in the seemingly impossible task of duplicating the sounds of a pipe organ. At one time there was an assemblage of enough tone wheel generators, switches and wiring to stock a warehouse.

This apparatus produced music of a sort but it hardly met Hammond's specifications for a relatively inexpensive instrument of rugged construction, easy to care for and hopefully then, of a size "small enough to carry in the back seat of a taxicab."

After dismantling a second hand piano, Laurens Hammond saved only the keyboard, which he equipped with simple switches connecting each key to the two wires that led across the room to a threaded maze of circuitry. This maze of circuitry itself led to the next discovery which in turn led this great invention on to progressive theories. When the wires were hooked together and attached to one piano key, a new sound was produced! One tone blended with the other to produce a third and more complex wave pattern. Another generator's sound was added, then another, until it became certain that a combination of the right wire connections could build millions of tones from a limited number of generator wheels.

All through the remainder of 1933 and into 1934 the days of work were intense and long. After months of laborious experimentation, Hammond and his aides concluded that 91 tone wheels of different shapes were sufficient to produce all the sounds required for the combinations most pleasant and familiar to the human ear. It was necessary that the tone wheels revolve at different speeds, so precisely accurate gearing had to be developed to transmit the power from a single shaft to each wheel. Hammond's synchronous motor, rated at only about one one-hundredth of a horsepower, kept the shaft spinning at a constant speed. Only when a key on the manual was depressed would a series of switches close and send a combination of tone wheel sounds to the amplifier and on to the loudspeaker. For example, the sound from the wheel whose humps passed the magnet at the rate of 440 a second produced the international standard note of "A".

Pure, single wave notes, or fundamentals produce recognizable and acceptable music. However, like the relatively pure notes of the flute, such music can become monotonous and strident unless "mellowed" or colored by other sounds such as that of the violin with its many harmonics. The builders of the first Hammond Organ knew they would have to make the other sounds above and below the fundamental available to the player. And they knew that the volume or intensity of each tone would have to be controlled.

The solution was found in a complexity of some 1,500 tiny switches with long-wearing paladium contact points and eight-and-a-half miles of wire, some as thin as a human hair. Each key on the manual depressed nine switches. Each switch was connected to different drawbars situated above the keyboard. It was these unique Hammond harmonic drawbars that permitted the Hammond player to mix fundamental tones with overtones and control the volume of each of these ingredients in the musical melange of sound. Now called "Tone-bars®", they could be set to produce millions of different tones.

The testing of the first prototype model began in 1933 when Lahey came from his treasury division office, pulled up a bench, and played Brahms' First Sym-

phony. Soon two organist-typists were employed to take turns playing the instrument hour after hour and day after day. News of the miraculous invention leaked out and visitors from many parts of the world dropped in at Hammond's Western Avenue plant to listen in admiration.

As winter approached, all effort was focused on perfecting the mechanism of the tone generator, the circuits, the transformer that blended the tones, the amplifier and the speaker that produced the sound of the music. Misfortune seemed once again to shadow Laurens Hammond. The treasurer's projection indicated that the company would lose almost a quarter of a million dollars for the fiscal year 1933.

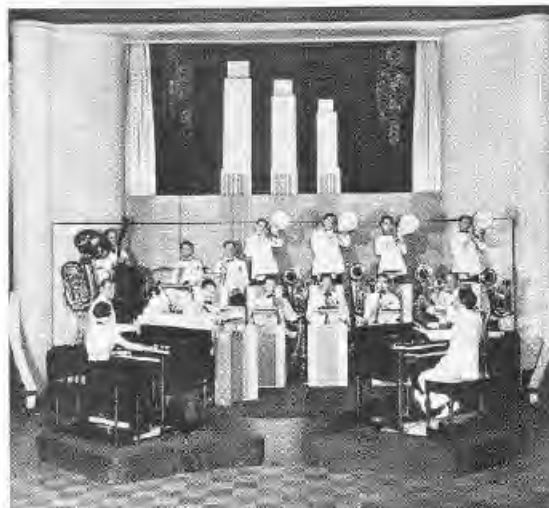
By January of 1934, the time for action could be delayed no longer. Laurens Hammond packed up the "packing box prototype" organ and took it directly to the United States Patent Office in Washington, D. C. There it was set up in the building's basement.

Patent office officials were more than usually attentive. They knew of the many previous attempts to build an electric organ, and they were interested in doing their utmost to push any product into production that gave even slight promise of providing jobs for workers. As the organist began to play, the rich tones filtered through the building, attracting a crowd of employees from the upper floors. It was not difficult to predict that the originality and worth of Hammond's invention would lead to quick approval. The patent was granted, in almost record time, on April 24, 1934.

The world's first practical electric organ was scarcely back in Chicago when, on February 7, 1934, two engineers from the Ford Motor Company arrived with instructions from Henry Ford himself. They were to survey the field and determine whether they could build an electric organ for the music-loving inventor of the Ford automobile. When they heard the Hammond Organ and examined its design, they knew that their job had been done for them. Their report to Ford brought forth the first order for the musical instrument that was not yet in production. Delivery of one of the first models off the line was promised following public introduction.



Paul Whiteman entertains at the Model A



Helen & Jesse Crawford and their Orchestra



Ethel Smith performs with Arthur Fiedler and the Boston Pops



Robert Montgomery and Virginia Bruce in a scene from the "Wooden Wedding" by MGM



Dr. Albert Schweitzer at the Concert Model RT-3



Sigmund Romberg enjoys the Hammond "M"

Active in the development of the organ in its first year was Milwaukeean John Hanert. As a youth he had played pipe organ accompaniment for silent movies and later gone to work for Captain Ranger who invented the vacuum tube organ that was demonstrated briefly in the early 1930's.

In 1934, Hanert read about the Hammond Organ patent and decided he wanted to become a member of the Hammond research team. Because of his knowledge of music and electrical and electronic engineering, he was employed as a research engineer. His inventive mind produced many Hammond innovations--the Solovox, the vibrato system, the Extravoice and the pedal solo unit. His vibrato system was the first that could be used with tone generators of the wheel type. In all, his patents totaled 57.

Emory Penny, sales manager since the days of the A-Box, and John Hanert were selected to present the new organ to the public. Loading one of the first units produced into a battered Ford panel truck, they set out for New York and the first (and only) Industrial Arts Exposition in Radio City's RCA Building. On the way they were to stop off in Detroit and give a demonstration for the company's first customer--Henry Ford.

Early rising Ford met early arriving Penny and Hanert at the Dearborn Laboratories which they had reached along rough and muddy roads, giving the electric organ an unintended road test for durability. Reluctantly following directions to drive their truck into a building with gleaming oak floors, they patiently waited half the day for the motor tycoon to give their organ a hearing. Their stay (hardly relieved by Ford's practicing hill-billy band and a lunch of grueling soybean dishes) ended with an audience that produced an unexpected order for six organs.

One of the Ford organs was exhibited for more than a quarter of a century in Ford's Greenfield Museum in Dearborn until consumed in a fire that destroyed many "firsts" of American industry. During those years it was seldom idle, however, for Henry Ford routed it through all of his plants and loaned it for many worthwhile causes.

The road from Detroit lay straight to New York City where, on April 15, 1935, the Hammond electric organ was unveiled



Fritz Reiner plays the Hammond Model A while Mr. & Mrs. Lawitz Melchior listen.

to nearly unanimous critical acclaim. Pietro A. Yon, organist of New York City's St. Patrick Cathedral, and Fritz Reiner, later conductor of the Chicago Symphony, took turns at the keyboard, as did George Gershwin (who immediately ordered one for his own use). Metropolitan Opera stars Rosa Ponselle and Giovanni Martinelli sang to the Hammond Organ's accompaniment that day, while Deems Taylor looked on approvingly.

Production and delivery of organs was more the problem in those first months of 1935 than selling. Organ demonstrations were arranged at such public places as skating rinks and race tracks. These public showings created the headline news that popularized the instrument.

The company's first advertisement in the April 25th issue of MUSICAL AMERICA magazine was, with its dignified, institutional style message and layout, in sharp contrast with the publicity stunts. "A notable musical development," the ad began, "the Hammond Organ is a new musical instrument. Yet it is built to conform to established pipe organ standards, requires pipe organ technique of the musician who plays it, and produces the entire range of tone coloring necessary for the rendition, without sacrifice, of the great works of classical organ literature. In addition, it permits many tone colors never before heard on any musical instrument. It is installed by plugging into an electric light socket...."

The first demonstration models were plugged into light sockets over much of



Milt Herth...one of the first of the famous Hammond Artists.

the nation during that first year, Penny, applying the same fervor to the organ that he had to the selling of clocks and bridge tables, piled up orders for 1,400 organs as he visited one music dealer after another from coast to coast.

Prices starting at \$1,250 would have seemed likely to discourage depression era buyers, but the cost was actually negligible compared to the heavy investment required for a traditional pipe organ. And of great sales value, aside from the instrument's instantly popular sound, was the fact that the Hammond Organ never required tuning and its maintenance was little more than an occasional drop or two of oil.

One of the first to stand enthralled in the lobby of the Hammond Clock Company on Western Avenue as the new electrical instrument was played was Milt Herth. He had spent his last 15 cents for carfare to see and hear this wonder of the day. Not long after, in August, 1935, stone broke, he hitched a ride to Gary, Indiana, to audition as organist at radio station WIND. He got the job, and, for 30 years was practically "married to the Hammond".

Herth's staccato style of playing the Hammond on WIND and other radio stations caught on quickly and became the distinguishing characteristic of his work. His "Stomping at the Savoy" recording of 1936 was the first of many discs that helped build his fame as a leading entertainer of theater, radio and night clubs.



John Hanert plays the Novachord for Laurens Hammond at the U.S. Patent Office in Washington, D.C.

The Novachord was an instrument conceived largely in Laurens Hammond's mind—an organ that would produce all the sounds of an orchestra from notes generated by radio vacuum tubes. Introduced in 1939 at the New York World's Fair, with Collins Driggs at the keyboard, it seemed to provide what the musical world had wanted.

Resembling a piano in appearance, the device produced music with amazing resemblance to that of a dance band. But the public evidently preferred to see the band, and the instrument never caught on.

The Novachord was discontinued at the outbreak of World War II but the basic idea in this first purely electronic organ was predecessor to all the Hammond and other vacuum tube and transistor sound generating organs.

A curious product appeared under the Hammond name in 1938. Curious because it seemed to take a step backward out of the electrical age and borrow some wind from the old pipe organ. It was a roll player organ. The instrument was the basic 1937 BC Model Hammond in a higher case to accommodate the roll playing mechanism that was made available through agreement with the Aeolian Skinner Organ Company of Boston. The basic price of \$2,000, however, was more than the public wanted to pay for an automatic organ, so the model was

discontinued after that first year (a production of only 100).

But the Hammond Company had more tricks up its sleeve. In 1940 it introduced the Solovox, an electronic apparatus invented by John Hanert to augment a piano with accompaniment or orchestral sounds. The Solovox, generating sound with vacuum tubes, had a three octave keyboard arranged like the piano, but it could be played over a six octave range. It had 12 tone selectors that produced a broad range of sound effects instantly popular with piano entertainers and piano owners. Three models were brought out in the years from 1940 to 1948, after which it was discontinued.



John Hanert and Laurens Hammond Testing the Solovox in the Western Avenue Laboratory.

One of the many women who became famous and helped the popularity of the electric organ, was the noted organist Ethel Smith. Stories vary as to where she first saw the Hammond. But, whether it was on a Hollywood movie lot or while she was vacationing in Miami, Ethel fell in love with the Hammond.

It was while she was playing at the St. Regis Hotel that she received a phone call from the New York Hammond Studio to dress her best and rush over. Upon arriving, she met the owner of the elegant Copacabana Club in Rio de Janeiro who wanted an attractive girl to play the Hammond in his club for a 26 week engagement. Ethel wanted the job, and got it. She stayed in Brazil about a year, as fascinated with learning the South American rhythms as her audiences were in hearing her play them on the Hammond.



Ethel Smith...the artist famous for Latin tunes and the Hammond sound.

After her return to New York, Ethel Smith was entertaining at the St. Regis one evening when she was asked to join a gentleman at his table. The man was George Washington Hill, fabled head of the American Tobacco Company. He had heard her play in Rio and wanted her for his Saturday night radio program, "The Hit Parade".

Her career was truly launched and Ethel Smith earned some of the highest fees ever paid a radio instrumentalist. Her recording of "Tico, Tico" sold more than two millions copies.

The honor of owning the first Hammond Organ has been a matter of controversy, with George Gershwin being accorded the title. But in actuality, the Hammond instrument with Serial Number One was delivered to Kansas City and sold to the Paseo Methodist Church. More than a dozen years later, Reverend Edward W. Potts wrote the company that upkeep on the organ had amounted only to a new set of tubes for the amplifier.....but he added that he might need to order another can of oil before long! (The Paseo organ has now been replaced by a later model, but Hammond Number One is still performing.)

Twenty-five hundred organs were produced without any change in the model. The Swell and Great manuals each had 61 keys and there was a 25 note pedal keyboard. There were 36 harmonic drawbars, two sets of nine for each manual, and two drawbars for the foot pedals to control the 8' and 16' organ tones. In addition there were 18 preset keys that enabled the organist to switch instantly to the instrumental or other voice he desired without setting the harmonic drawbars.

The 359 pound instrument also had one expression pedal controlling the Swell, Great and Pedal keyboards, and there was one adjustable tremulant for all three. All this was contained in a console, or cabinet, that was only a fraction over four feet wide, three feet high and two feet deep. "Church organ in a packing box" was a reasonably exact description.

A second model was introduced in 1936, the only change being a new case with somewhat different woodwork. A third model for the church market was virtually the same. These early models changed the old clock company's deficit of \$38,256 in 1935 to a profit of \$228,393 in 1936.....and the March year end figure in 1937 was a positive \$465,680.

Beginning in 1937, a series of new models was introduced, each designed to meet special marketing requirements.

In 1937, business was booming for Hammond despite another slump in the general economy. The company was still selling clocks, but it was apparent that organs would be a substantial part of the company's business, so the company name was changed to the Hammond Instrument Company to cover any addi-



Oscar D'Amalfi, organist at Radio City Music Hall, seated at the Hammond Model E in his studio.

tional products which might be made in the future. An additional plant was put into production on Chicago's Bloomingdale Avenue and a warehouse leased on George Street.

The two Hammond "Men of the Year" could hardly have been so described at the time. Thomas George's efforts to perfect an organ that generated tone from radio vacuum tubes had reached one stage of fruition and he had applied for a patent. But finding no manufacturer rushing to him with marketing plans, he came to Hammond for a job. His period of service to the company extended over a period of seven years until he resigned in 1943. After years of negotiations, he eventually succeeded in having his organ built and marketed under his given name of Thomas. Some 20 years later, he returned to the Hammond fold in the role of a consultant. (The Thomas Organ Company is no longer in existence.)

The other new employee who joined the Hammond staff in 1937 was John A. Volkober, who started as an office boy. In 1965, he was named president of Hammond Organ Company when Sorensen became chairman of the board.

The term "routine" might have been applied to the Hammond business in 1937 until, one day, a "time bomb" communication was received. It was a so-called stipulation from the Federal Trade Commission asserting that certain

statements in Hammond advertising were not completely accurate.

The complaint, in general, said that the Hammond instrument was not an "organ" and that it could not produce an "infinite number" of tonal variations. Laurens Hammond, more the self-effacing and quiet inventor than a public pugilist, nevertheless decided to fight. He was a participant in one of the most amazing events in the history of music.

The FTC had decided to have an impartial panel listen to a \$75,000 pipe organ and a \$2,600 Hammond installation to determine whether the panelists could tell the difference. Players of both instruments were hidden from view by screens and the Hammond speaker cabinets were concealed among the organ pipes at the University of Chicago Chapel.

A panel of 15 students and 15 professional musicians was asked to record whether it was the pipe organ or the Hammond electric organ that was being played in a number of test pieces. That these jurors were wrong in their answers ten times out of 30 was indication enough that the Hammond had carved itself a permanent niche in the musical instrument field. A year later the FTC decided that the company could call its instrument an organ but must desist from claiming an infinite number of tones.....for, after all, it could produce only 253,000,000 tones!

Affairs of the company were not greatly disturbed in 1940, although the year was marked with recognition of Laurens Hammond's electronic organ at two of the highest scientific and industrial levels. He was awarded the Franklin Institute's John Price Wetherell medal and the National Association of Manufacturers' Modern Pioneer Award.

Pearl Harbor year of 1941 marked the end of Hammond's civilian production for the duration, as it did for so many others. America's entry into the war put Hammond into the military production "front lines". However, a limited run of electric alarm clocks was produced, and about 1,400 "GI" electric organs were made for service personnel on ship and shore around the world. Many of these organs, containing the mechanism of the Church Model D with its chorus generator (produced in 1939-1942), can still be seen in the wartime cabinets at army posts, in hospitals and aboard naval vessels performing their religious and entertainment functions.

During the war period, Hammond leased a Ravenswood Avenue plant for war work and a building on Oakley Avenue for research and development. The company designed and manufactured many of the flight control systems for glide bombs and for the Northrup Flying Wing. It developed and gave to the air force a flight path simulator computer for training glide bomb pilots. Also developed by Laurens Hammond and his engineers were infra-red and light-sensing devices for bomb guidance, a new type gyroscope for control systems, a mechanical shutter for high speed aerial cameras, a simple and inexpensive bank and turn indicator, and a "throw away" device for determining a plane's altitude. The latter apparatus was dropped out of the plane, emitting a radio signal until it crashed into the ground or water. The elapsed time of fall would indicate the plane's altitude.

The Bloomingdale Avenue woodworking plant built the cabinets for the "GI" organs and then worked under a government contract supplying coffins for the remainder of the time.

The Hammond Organ sang many a song of reverence and camaraderie during World War II. One, mounted on a truck, traveled the length and breadth of the island of New Caledonia in the South Pacific. Astonished natives, knowing nothing but the sound of their tribal

drums, came out of the bush to listen in wonderment. In cold Aleutian island outposts, the Hammond was heard in chapels and recreation halls. It launched a ship in Seattle, relieved monotony for troops at gun batteries on the West Coast, and played for memorial services for President Roosevelt on Okinawa only two weeks after the invasion.

Wherever there was a Hammond, there was never a shortage of men to play it....pianists among the troops had little difficulty mastering the technique of the electric organ. Many sent money home regularly throughout their service to build a fund for buying an organ after the war.

Following VJ Day, the Hammond Company quickly converted back to civilian production. The organ was greatly improved after the war, incorporating many additions. Most significant of the features of the new organ was the vibrato, an effect that had been difficult to achieve despite many attempts. The vibrato was available on both home and church models from 1946 on, and in 1949, was improved so that it could be

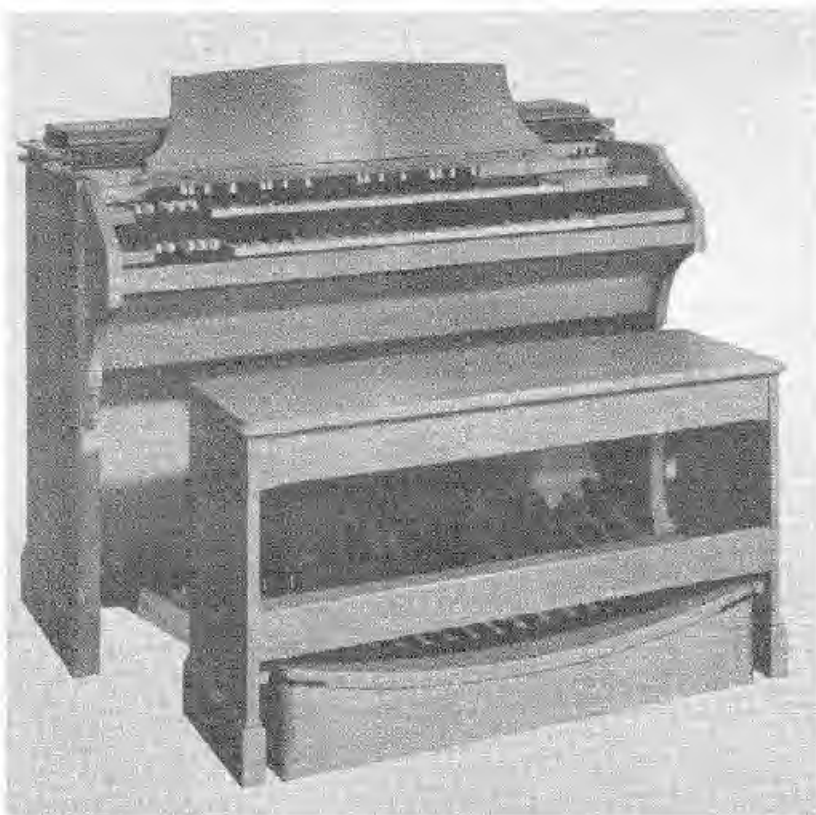
used on both manuals simultaneously or on either manual separately.

Also introduced in 1949 was a concert organ, the Model RT. This instrument incorporated a unique pedal solo system with separate volume control.

The growth in organ sales and diversity of product line since the end of the war had increased the company's need for additional office and production space. As a solution, the Hammond Company purchased a building at 4200 Diversey Avenue that, later enlarged, still serves as the main office of the company.

The year 1949 requires a place of its own in the annals of the modern organ industry for it marked a turning point in the conception of both market and product.

Previously, Hammond Organ models and those of competitors had not been designed primarily for the home. Since many Hammond Organs were going into homes, Hammond management again led the industry in concluding that an untapped market lay in plain sight--the average American home.



Hammond Model RT-3 Concert Organ

The Hammond staff invented, designed and built the "Cinderella" organ and saw it transformed into the reigning princess of the industry. The new product was the Hammond Spinnet Model M.

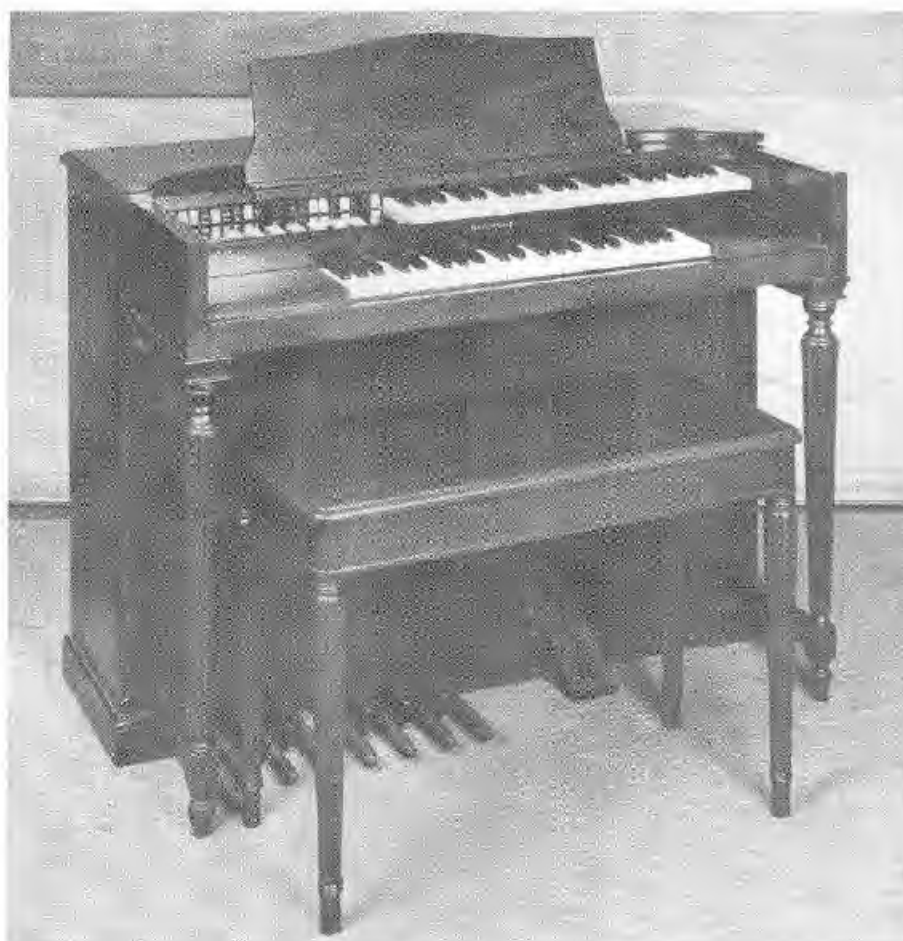
Those who saw the new spinnet organ recognized that its size--slightly smaller than the first Hammond Model A--was perfectly dimensioned for a modern living room or game room. And there was no need for additional space for amplifying and speaker equipment, for these were all housed in the console. The styling was functional and attractive, the music was "real organ" and the price was \$1,285--only \$35 more than the Hammond of more than a dozen years earlier.

The Hammond spinnet had only 44 keys on each of its two manuals instead of the standard 61. The many potential buyers were not dismayed, they wanted organ music in their homes, and here it was! They learned to play with the two manuals and the 12-note pedalboard.....they learned to play for their own pleasure.....they learned to play for the entertainment of their friends. Many became skilled organists and traded in the spinnets for larger and more versatile Hammond models.

The spinnet, like all of the Hammond Organs, was "built like a battleship". Small churches bought them and large churches used them in their chapels. And, the ultimate compliment, Ham-

mond's competitors quickly rushed their own smaller sized organs onto the market in imitation of the leader. Within six years, Hammond sold more spinnets than all of the organs it had previously produced.

The spinnet brought friends and neighbors together. These meetings of Hammond Organ owners led to the spontaneous formation of Hammond Organ Societies for fun and relaxation. So enthusiastic and active were these initial Hammond Organ Societies that there are still hundreds of these clubs in active participation across the country.



HAMMOND "M"

1949 — the "Cinderella" organ brought the availability of organ music into the homes of millions.

For anyone who may have asked, "how much simpler can an organ be," Hammond had an answer the very next year—the first "chord organ". Anyone could learn to play in simple fashion in a few minutes. So simple and practical was this new Hammond that a whole market area opened up. With its simplicity and attractive price of only \$975, many households began to weigh a Hammond Organ against a piano. It was meant to be played for fun and not as an instrument for producing trained organists.

The Chord Organ (Model S) had a single, three-octave keyboard with 37 keys. In addition it had a panel of 96 buttons producing selected chords when a button was depressed with a finger of the left hand. It also contained two foot pedals that selected the "root" note or the "fifth" note of any chord played.

To make things even easier for new learners, special sheet music was developed. Playing the Hammond Chord Organ became as easy as reading an ordinary road map or, for many map-puzzled motorists, far easier.

The sounds of the Hammond Chord Organ originated, not in the electro-mechanical sound generator of standard Hammonds, but in electronic vacuum tubes. In fact, part of the circuitry of the Solovox was built into the new product.

Millions of dollars were spent in advertising to bring people into dealers' stores to try the spinet and chord organs for themselves. Dealers offered a limited number of free lessons to buyers in the manner popularized and proven successful long before with the sewing machine.

Realizing that the teachers of these new organ owners would be the best of all possible spokesmen for the company, Hammond set up a program of teacher workshops in 1951 under the direction of Porter Heaps. Two hundred one-day teacher meetings were held over a three-year period for some 6,000 music teachers. They were taught methods for overcoming any lack of confidence, often common to beginners, and ways to maintain their initial enthusiasm as they progressed into more complex avenues.

Hammond continues, and constantly improves, its many-faceted programs for organ teachers. Since its beginning, Hammond Organ has relied heavily on the advice and support of music teachers and professional musicians. New mod-



Hammond Model S-6

The Chord Organ Which permitted anyone to learn to play in a few minutes time.

els are subjected to the criticisms and suggestions of panels of these experts.

In 1953 the company name was changed to the Hammond Organ Company. To handle the company's mounting volume of business with more efficiency, a building with ground area for parking and future expansion was purchased in Chicago's western suburb of Melrose Park in 1956. In the period following the introduction of the spinet organ, the company concentrated its efforts on the refinement of its products, rather than the development of new products. However, it was soon realized that the competition was quickly growing and profits available from the growing market would only be maintained with the introduction of newer and more advanced organ models.

Steps were taken to broaden the company's distribution base through the gradual expansion of its dealer outlets

and with particular emphasis on the establishment of Hammond Organ Studios. In the same period, greater emphasis was placed on out-of-store promotions in recognition of the fact that relatively few people were aware of the existence of organs for the home or, if they were aware, thought of the organ as something too difficult to play and therefore, not suitable for them. This was the beginning of the "outside promo" and the "easy play" theme for selling organs which dominates selling in the industry today.

For much of its organ product life, the company was unchallenged. It was the industry that it had created. Electric organ was synonymous with the name Hammond and its tone wheel generator that by its very nature could never get out of tune. Hammond became a word in dictionaries, encyclopedias and text books.

In 1955, the first percussion was introduced on the Models B-3, C-3, RT-3 and the M-3. Hammond percussion became world-famous, especially in the jazz idiom. The emphasis of the second and third harmonics with control of the volume and decay, enabled organists--professional and novice alike--to create a multitude of new sounds. The Model B-3 still holds the record as the largest selling console model organ in the industry.

Although the concept of reverberation occurred to Laurens Hammond in 1939, it was not until 1959 that the newly developed dry reverberation unit was perfected to provide a truly practical solution to enhance this particular area of tone reproduction. Prior to this time, the necessity of using oil filled tubes prohibited the use of reverberation in organ consoles--the required mechanism could only be contained in organ tone cabinets.

1960--"the turn of the decade" is remembered for an event and an innovation that vastly broadened the audience and the market for the Hammond Organ. Dedicated to the public at Chicago's world renowned Museum of Science and Industry was an extensive and elaborate Hammond exhibit on the physics of sound and the art of music. Daily over succeeding years thousands of school children and adults operated the automated displays to make visual and audible the waves of air and the waves of electricity that make the music that man has always loved.

Laurens Hammond believed in management succession by intent rather than biological accident. In 1955, he relinquished the presidency to devote himself entirely to research. On February 12, 1960, without fanfare or public fare-

wells, he retired as a director and board chairman at the age of 65. Sorensen once characterized Laurens Hammond as an ideal manager. Why? "He relied on people." Laurens Hammond spent his retirement years in Cornwall, Connecticut. Hammond, the holder of 110 U. S. Patents died on Tuesday, July 3, 1973, at the age of 78.

Even without his leadership, Hammond had founded and established a company that continued to prosper and change with the times. The decade of the sixties produced several noteworthy advancements to the organ industry and to the Hammond Company.

In 1960, the first self-contained console Model A-100 was introduced. To many, this was the first time that they could have most of the features of the B-3 without the need for external amplifier and speaker equipment.

HAMMOND MILESTONES



Porter Hays presented concerts and clinics throughout the world for Hammond.



Hammond Model A with attached Solovox



Hammond Model B-3



The Hammond "GI" Organ--built to government specifications. Many of these instruments traversed the world during World War II and still serve many bases today.



A group of Piperettes surround Rosemary Bailey.



The 'X-66'

The first pedestal design, the X-66 was introduced in 1965. This radical new look was an overnight sensation. The first composite tone generator organ in the industry with tonebars and electronic tabs created new and unique

sounds. The X-66, with an up-to-then unheard of price of \$10,000, proved extremely popular not only with entertainers of the sixties, but many home organists also wanted one for their own.

The sixties also produced the first Hammond with a built-in Leslie Speaker. Now the tone which had long been desired by the novice could be included in a home organ without the need for the large tone cabinet.



The X-68 and Tonecabinet



The X-77 and Tonecabinet

1970 introduced the first automatic chording instrument in the industry, the Piper Autochord®. Like its ancestor, the Hammond Chord Organ, the Piper was a single keyboard instrument designed specifically for the non-playing hobbyist. The Piper didn't have any pedals and it didn't feature chord buttons--instead, the player actually played a chord which in turn played an automatic bass part with the appropriate rhythmic accompaniment.

Along with the Piper, came another new marketing concept from Hammond. A group of Piperettes was recruited and trained by Rosemary Bailey. These young ladies were evident in almost every shopping mall, homeshow or other place where multitudes of people gathered. The Piper was the instrument which was the founder of mass merchandising in the organ business--actually a development and continuation of the techniques which were started twenty years earlier with the Hammond Chord Organ.

Over the years, many changes beset the Hammond Company as it continued the growth which created an international company to distribute and build product throughout the world market. As the technology changed, a very gradual re-alignment of facilities kept pace with the streamlined production techniques being instituted.

By 1972, the Hammond Company had changed significantly. The original tonewheel invention was becoming obsolete. The newly developed LSI (large scale integrated circuit) technology was creating new sounds, in less space and for a lower cost. The first organ with these new advancements was the spinet model called the "Phoenix", which was followed later that year by the new deluxe console, the "Concorde".

State-of-the-art technology was evident at the Diversy Avenue facility and the other Hammond plants. The tonewheel assembly lines were becoming more and more obsolete. By 1975, the last of the tonewheel organs were being built. The end of an era--the final run of B-3's rolled off the assembly line.

Since the tonewheel generator was no longer produced, 1976 saw the close of the Melrose Park facility where final assembly had always been the prime activity. Final assembly was moved to the Diversy facility. The Bloomingdale Avenue woodworking facility, the same



The Piper

plant that manufactured organ cabinets before World War II, as well as clock cases and coffins, was long outdated. The replacement solution was to open a new, highly advanced woodworking facility in Sikeston, Missouri--one of the most modern woodworking plants in the United States. During 1978, the phase-out of the Bloomingdale Avenue plant and the phase-in of the Sikeston Woodworking Plant was accomplished.

In 1973, the need for a product service and parts warehouse was realized with the opening of the Franklin Park facility. Expanded quarters were required in 1974 and once again in 1983. All parts and product inventory are now warehoused in this location.

The industry as known by Laurens Hammond was entirely different. Many of the traditional features--tonebars, reverse-colored presets, etc.--were still maintained, however the tone was created by the latest technology. At one point, the Hammond Company even tried mass merchandising techniques by marketing the Hammond Sounder for under \$500 not only in music stores, but through discount and catalog outlets.

During the mid 70's, Hammond Organ became a part of The Marmon Group of Companies. During this high-tech era, the advantages of being a part of a large conglomerate were realized....operat-

ing as an autonomous division of The Marmon Group, the Hammond Organ Company was now under the leadership of the current President, Mr. Donald R. Sauvey.

Mr. Sauvey's goal was first and foremost to return quality control to the "built-like-a-battleship" reputation that was started in 1934, yet maintain and further develop the latest technological advancements in engineering and manufacturing. That these goals are continually being realized is evident in the development of features such as "Compose-A-Chord" and the manufacturing techniques so apparent in the printed circuit board assembly division.

Several of the latest chapters of historical significance in the Hammond Company revolve around the acquisition of two very important companies in the industry. The Gibbs Manufacturing and Research Company, makers of the leading reverberation unit used throughout not only the organ industry but the entire music industry, became a part of the Hammond family under the Accutronics masthead. Also a part of Accutronics, Inc., is the printed circuit board division which uses all of the latest up-to-the-minute equipment to produce PC boards for Hammond Organ and its subsidiaries as well as other industrial electronic firms.

Shortly after the invention of the Hammond Organ, an independent inventor named Don Leslie began designing a speaker cabinet to overcome his disappointment with the sound of the Hammond Organ he purchased in 1937. Upon recalling that the acoustics of the organ were markedly improved when used in large halls, he began experimenting with sound reverberation and sound motion to duplicate the "hall" effect. The sound that is often imitated, but never duplicated is indeed a unique marriage between the Hammond and Leslie sounds. Electro Music, maker of Leslie speakers, became a part of the Hammond umbrella under its Accutronics Division in 1980.

As engineering advancements continue in leaps and bounds, it is the intent of the Hammond Company to step boldly in the field of new technology.....highly computerized with the miniaturization of internal components.....while retaining many of the traditional characteristics of the original Hammond Sound which Laurens Hammond pursued from the very beginnings of his development.

As an international company, Hammond Organ is well represented and well-known throughout the entire world. Hammond Organs are found in some of the most remote areas of the jungle, the polar regions of the north and south and literally everywhere else that man inhabits.

In addition to the facilities in the United States, 1964 saw the founding of Hammond Organ (U. K.) Limited located in Milton Keynes, just outside of London. Hammond Organ U. K. handles distribution throughout the United Kingdom. In 1969, Hammond International, Canada Ltd. was founded to distribute and now manufacture the complete line of Hammond Organs in Toronto. A partnership with Sakata Shokai Ltd. of Osaka, Japan, created the Nihon-Hammond Limited Company in 1970—a joint venture which supplies organs throughout much of Europe and the Far East.

The latest distribution facility, Hammond Organ Australia, was opened in 1982. Through these Hammond International Companies and the network of distributorships established by them world-wide, the name Hammond continues to be known and respected around the world.

The Hammond Organ story began in a loft over an Evanston grocery store. Owners and players range over all areas of American life—former presidents, baseball players, famous entertainers, the many professional organists that have played Hammond Organs over the past fifty years and of course, the multitude of home and hobby organists which have developed as a result of the over 1,000,000 Hammond Organs which have been manufactured and sold since that first Hammond Model A made its appearance at the U. S. Patent Office in 1934.

The company that created an industry with the invention of the Hammond Organ in 1934 has developed into an effectively integrated and diversified organization which enjoys a world-wide reputation for the high quality of its products. And it is planning for continued growth, both through new products developed by its present organization and through the acquisition of additional companies. Its potential—virtually unlimited!

HAMMOND® ORGAN.....often imitated,
never duplicated!



1934 — Composer Model 146



1984 — Elegante Model 340